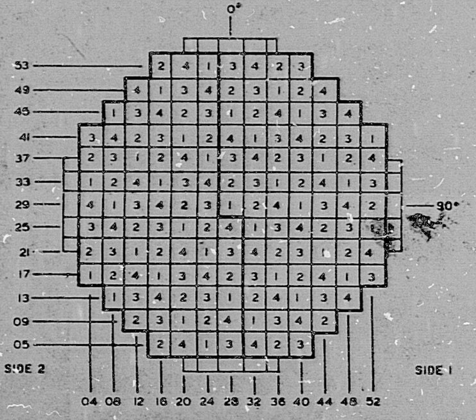
VALVE AND CONTROL TABULATON (CON'T)

DEVICE		SWITCH	INDICATOR LAMPS			LOCATION	
REF DESIGN	FUNCTION		RED	GREEN	OTHERS	MTG LOC	SH
---	HIGH WATER LEVEL TRIP BYPASS	S4C	---	---	---	H13-P680-11E1	8
---	REACTOR SCRAM LOGIC RESET	S5A	---	---	---	↑	5
---	REACTOR SCRAM LOGIC RESET	S5B	---	---	---		6
---	REACTOR SCRAM LOGIC RESET	S5C	---	---	---	↓	7
---	REACTOR SCRAM LOGIC RESET	S5D	---	---	---	H13-P680-11E1	8
---	MSIV TEST	S6A	---	---	---	H13-P691	5
---	MSIV TEST	S6B	---	---	---	H13-P692	6
---	MSIV TEST	S6C	---	---	---	H13-P693	7
---	MSIV TEST	S6D	---	---	---	H13-P694	8
---	TURBINE VALVE TEST	S7A	---	---	---	H13-P691	5
---	TURBINE VALVE TEST	S7B	---	---	---	H13-P692	6
---	TURBINE VALVE TEST	S7C	---	---	---	H13-P693	7
---	TURBINE VALVE TEST	S7D	---	---	---	H13-P694	8
C11-F182 SOL A	SCRAM DISCHARGE VENT & DRAIN	S2A	---	---	---	H13-P680-6C	5
C11-F182 SOL B	SCRAM DISCHARGE VENT & DRAIN	S2B	---	---	---	H13-P680-6C	6
C11-F180	SCRAM DISCHARGE VOLUME ISOLATION VALVE	---	X	X	---	H13-P680-11E1	11
C11-F181	SCRAM DISCHARGE VOLUME ISOLATION VALVE	---	X	X	---	H13-P680-11E1	11



283X227AAG1&G2(218)
ROD SCRAM GROUP ARRANGEMEMENT

HYDRAULIC CONTROL UNITS REACTOR SIDE 2			
GROUP 1	GROUP 2	GROUP 3	GROUP 4
04-17	04-21	04-25	04-29
04-33	04-37	04-41	08-25
08-13	08-17	08-21	08-41
08-29	08-33	08-37	12-17
08-45	12-09	12-13	12-33
12-21	12-25	12-29	12-49
12-37	12-41	12-45	16-13
16-17	16-05	16-09	16-29
16-33	16-21	16-25	16-45
16-49	16-37	16-41	20-05
20-09	16-53	20-17	20-21
20-25	20-13	20-33	20-37
20-41	20-29	20-49	20-53
24-05	20-45	24-13	24-17
24-21	24-09	24-29	24-33
24-37	24-25	24-45	24-49
24-53	24-41	28-05	28-09
28-13	28-17	28-21	28-25

HYDRAULIC CONTROL UNITS REACTOR SIDE 1			
GROUP 1	GROUP 2	GROUP 3	GROUP 4
28-29	28-33	28-37	28-41
28-45	28-49	28-53	32-05
32-09	32-13	32-17	32-21
32-25	32-29	32-33	32-37
32-41	32-45	32-49	32-53
36-17	36-05	36-09	36-13
36-33	36-21	36-25	36-29
36-49	36-37	36-41	36-45
40-13	36-53	40-05	40-09
40-29	40-17	40-21	40-25
40-45	40-33	40-37	40-41
44-21	40-49	40-53	44-17
44-37	44-09	44-13	44-33
48-17	44-25	44-29	44-49
48-33	44-41	44-45	48-13
52-25	48-21	48-25	48-29
52-41	48-37	48-41	48-45
	52-29	52-17	52-21
		52-33	52-37

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LEGEND:

- LOCATION USED ONLY WHEN NECESSARY FOR CLARITY
- XXXX — PART NUMBER OR TERMINAL NUMBER
- SYSTEM NUMBER
- MATCH NUMBER (LAST NO. USED 101)
- ZONE
- SHEET NUMBER
- INDICATES GROUND BUS
- INDICATES SIGNAL COMMON ISOLATED BUS
- XXX INDICATES PGCC LINE CODE WHEN REQUIRED
- (DX) CLASS IE, DIV X NUCLEAR SAFETY RELATED. RPS-NON-CLASS IE POWER NON ESSENTIAL POWER ESF-CLASS IE POWER
- (AX) ASSOCIATED WITH AND TREATED AS CLASS IE, DIV X RPS-NON-CLASS IE POWER NON ESSENTIAL POWER ESF-CLASS IE POWER
- (N) NON-CLASS IE NON DIVISIONAL
- (C) INDICATES PROCESS COMPUTER INPUT
- = PGCC CABINET TERMINAL

SSX = SPECIAL SOLENOID WIRING

VALVE AND CONTROL TABULATION

DEVICE		SWITCH	INDICATOR LAMPS			LOCATION	
REF DESIG	FUNCTION		RED	GREEN	OTHERS	MTG LOC	SH
C11-F009 SOL A	SCRAM DISCHARGE VENT & DRAIN	S2A	---	---	---	H13-P680-6C	5
C11-F009 SOL B	SCRAM DISCHARGE VENT & DRAIN	S2B	---	---	---	H13-P680-6C	6
---------	REAC SCRAM TRIP LOGIC "A"	---	---	---	X (WHT)	H13-P691	9
---------	REAC SCRAM TRIP LOGIC "B"	---	---	---	X (WHT)	H13-P692	9
---------	REAC SCRAM TRIP LOGIC "C"	---	---	---	X (WHT)	H13-P693	9
---------	REAC SCRAM TRIP LOGIC "D"	---	---	---	X (WHT)	H13-P694	9
---------	TRIP ACTUATOR LOGIC "A" GP1	---	---	---	X (WHT)	H13-P680-11E1	10
---------	TRIP ACTUATOR LOGIC "A" GP2	---	---	---	X (WHT)	↑	10
---------	TRIP ACTUATOR LOGIC "C" GP3	---	---	---	X (WHT)		10
---------	TRIP ACTUATOR LOGIC "C" GP4	---	---	---	X (WHT)		10
---------	TRIP ACTUATOR LOGIC "B" GP1	---	---	---	X (WHT)		10
---------	TRIP ACTUATOR LOGIC "B" GP2	---	---	---	X (WHT)		10
---------	TRIP ACTUATOR LOGIC "D" GP3	---	---	---	X (WHT)		10
---------	TRIP ACTUATOR LOGIC "D" GP4	---	---	---	X (WHT)		10
C11-F010	SCRAM DISCHARGE VOLUME ISOLATION VALVE	---	X	X	---	↓	11
C11-F011	SCRAM DISCHARGE VOLUME ISOLATION VALVE	---	X	X	---	H13-P680-11E1	11
C11-F110A	BACK-UP SCRAM VALVE	---	---	---	---	--------	11
C11-F110B	BACK-UP SCRAM VALVE	---	---	---	---	--------	11
-------	RECIRC PUMP TRIP SYSTEM "A"	S9A	XX	---	XX (WHT)	H13-P691	11,14
		---	---	---	XX (WHT)	H13-P694	11
---------	RECIRC PUMP TRIP SYSTEM "B"	S9B	XX	---	XX (WHT)	H13-P692	11,14
		---	---	---	XX (WHT)	H13-P693	11
---------	SYS MANUAL INOPERATIVE SWITCH ACTIVATED	S8A	---	---	---	H13-P680-11E1	14
---------	SYS MANUAL INOPERATIVE SWITCH ACTIVATED	S8B	---	---	---	H13-P680-11E1	14
---------	24VDC PWR DIV 1	---	---	---	X (WHT)	H13-P691	19
---------	24VDC PWR DIV 2	---	---	---	X (WHT)	H13-P692	20
---------	24VDC PWR DIV 3	---	---	---	X (WHT)	H13-P693	21
---------	24VDC PWR DIV 4	---	---	---	X (WHT)	H13-P694	22
---	REACTOR SYS MODE	S1	---	---	---	H13-P680-11E1	5,6 7,8
---	MANUAL SCRAM	S3A	---	---	---	H13-P680-11E1	5,19
---	MANUAL SCRAM	S3B	---	---	---	↑	6,19
---	MANUAL SCRAM	S3C	---	---	---		7,19
---	MANUAL SCRAM	S3D	---	---	---		8,19
---	HIGH WATER LEVEL TRIP BYPASS	S4A	---	---	---		5
---	HIGH WATER LEVEL TRIP BYPASS	S4B	---	---	---		6
---	[illegible]	S4C	---	---	---	[illegible]	7

MPL NO.	REFERENCE DOCUMENTS
1. C11-1010	CONTROL ROD DRIVE HYD SYS P&ID
2. C71-1010	REACTOR PROTECTION SYS IED.
3. B21-1010	NUCLEAR BOILER P&ID
4. D17-1050	PROCESS RADIATION MON SYS ELEM DIAG (D17A)
5. C51-1080	POWER RANGE NEUT MON SYS ELEM DIAG (C51B).
6. C51-1070	START-UP RANGE NEUT MON SYS ELEM DIAG (C51A)
7. B21-1090	NUC STM SUPPLY SHUTOFF SYS ELEM DIAG (B21H)
8. C11-1050	ROD CONTROL INFORMATION SYS. ELEM. DIAG. (C11A)
9. C71-1060	RPS MG SET CONTROL SYSTEM ELEM DIAG (C71B)
10. C71-1070	RPS-SEPARATION SCHEME ELEM DIAG (C71C)
11. C71-4010	REACTOR PROTECTION SYS-DESIGN SPEC.
12. A62-4050	ELECT. EQUIP SEP SAFE. SYS-DESIGN SPEC.
13. C91-4030	PERFORMANCE MONITORING SYSTEM I/O LIST
14. G33-1050	REACTOR WATER CLEAN-UP SYS ELEM DIAG (G33A)
15. B33-1030	REACTOR RECIRC SYS ELEM DIAG (B33A)
16. C95-1050	ERIS ELEMENTARY DIAGRAM
17. A62-4010	SPECIAL WIRE AND CABLE

NOTES (CONT.)

26. ERIS SIGNAL LOADING ON C71-1050 SYSTEM SHALL NOT EXCEED 0.001 VOLTS.

27. ALL ERIS SIGNAL WIRING MUST MEET THE SEPARATION REQUIREMENTS DEFINED IN SPECIFICATIONS A62-4050 AND A62-4010.

28. (△) NON-CLASS IE WIRING WITHIN CABINETS CONTAINING CLASS IE RPS DIVISIONAL WIRING OR ESF CLASS IE WIRING SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE OF SIX (6) INCHES FROM SAME. CLASS IE RPS DIVISIONAL WIRING SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE OF SIX (6) INCHES BETWEEN CLASS IE WIRING OF A DIFFERENT DIVISION. BARRIERS SHALL BE INSTALLED IN THE EVENT THE MINIMUM SEPARATION DISTANCE IS NOT MAINTAINED UNLESS OTHERWISE DEMONSTRATED BY ANALYSIS.

EIS IDENT: REACTOR PROTECTION SYSTEM
GENERAL ELECTRIC
828E531AA
ELEM DIAG
REACTOR PROTECTION SYSTEM

OVERALL REVISION 15

MPL NO. (C71-1050)

NUCLEAR SAFETY RELATED

DIVISION 1 THRU 4

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NOTES:

1. ALL CABLE AND PANEL WIRING TO BE SEPARATED PER REF. DOC 12.
2. ANNUNCIATORS TRIP ON CIRCUIT CLOSURE.
3. (△) DELETED
4. (△) FOR SEPARATION REQUIREMENTS WITHIN PENETRATIONS, SEE REF 12.
5. DELETED
6. (XX-XX) THE CONTROL ROD DESIGNATION SYMBOL IS USED WHERE MORE THAN ONE ROD IS REPRESENTED.
7. PROVIDE PHYSICAL ISOLATION AND SEPARATION OF WIRING AND DEVICES AS APPROPRIATE TO PRECLUDE THE POSSIBILITY OF A SINGLE COMPONENT FAILURE (CLOSURE, OPENING, OR SHORT) FROM PREVENTING AUTOMATIC SCRAM. SEE REF DOC 10 AND 12.
8. (△) CONDUIT FROM CIRCUIT DEVICE TO TERMINAL DEVICE. DO NOT RUN DIFFERENT DIVISION IN THE SAME CONDUIT. TERMINAL DEVICES MUST COMPLY WITH REF DOC 12, PARA. 4.3.1.2. & 4.4.1. ALL REACTOR PROTECTION SYSTEM WIRING IN H13-P680 SHALL BE RUN TO TB'S JJ, KK, LL OR MM DEPENDING ON THEIR DIVISION.
9. UNLESS OTHERWISE INDICATED, THE FOLLOWING REFERENCE DESIGNATIONS SHOWN ON THIS DIAGRAM ARE PREFIXED WITH C71A-.

REF DESIG	NAME	REF DESIG	NAME
KXX	RELAY	XXX	LINE CODES (SEE LEGEND)
SXX	SWITCH	RXX	RESISTOR
FXX	FUSE	ZXX	CARD FILE
CBXX	CIRCUIT BREAKER	ZXX-T	CALIBRATION UNIT
TBXX	TERMINAL	ATXX	ISOLATOR CARD
TXX	TRANSFORMER	DSXX	LIGHT
		CRXX	DIODE

10. THE LOADS SHOWN ARE ESTIMATED, NOT MEASURED QUANTITIES. AC LOADS ARE BASED ON 60 HZ. (SS = STEADY STATE, T = TRANSIENT).
11. (△) LIGHTS CAPABLE OF 20% OVER-VOLTAGE.
12. (△) SEPARATE RETURN WIRE (NO. 14 AWG OR LARGER) TO BE PROVIDED FOR EACH TRIP AND CALIBRATION UNIT OF THE CARD FILE.
13. DELETED
14. (△) THE SCRAM CONTACTORS SHALL BE ENCLOSED IN METAL BOXES [illegible] INTERCONNECTING CABLES ROUTED IN METALLIC CONDUIT. [illegible] SOLENOID WIRING FOR ANY GIVEN GROUP MAY BE [illegible] IN CONDUIT WITH NO OTHER WIRING.
15. INDICATING LIGHTS ON H13-P680 [illegible] ARE [illegible]. ALL OTHERS ARE [illegible] (LAMP) AND 19589854 (HOLDER). ALL LIGHTS ARE SUPPLIED WITH PANELS.
16. (△) DEVICES & WIRING SHALL BE INSTALLED IN CANS & CONDUIT WITHIN THE PANEL.
17. (△) THIS IS ESSENTIAL POWER WIRING. WITHIN THE CONTROL ROOM PANELS IT SHALL BE SEPARATED FROM NON-ESSENTIAL POWER WIRING IN THE SAME DIVISION BY 6 INCHES OR IT SHALL BE ROUTED IN GROUNDED METALLIC CONDUIT.
18. (△) THIS IS NON-ESSENTIAL LOGIC POWER WIRING. IN PGCC DUCTS AND FLOOR WIREWAYS CONTAINING ESSENTIAL POWER WIRING OF THE SAME DIVISION, THIS WIRING SHALL BE ROUTED IN GROUNDED METALLIC CONDUIT.
19. (△) DELETED
20. (△) PARTS (R1A THRU R1H) ARE CURRENT LIMITING RESISTORS AND MUST BE MOUNTED INSIDE THE LAST SCRAM CONTACTOR BOX IN [illegible]
21. (△) DELETED
22. (△) THESE RELAYS ARE MDR WITH A METAL BARRIER BETWEEN COIL AND CONTACTS. THESE ARE ISOLATOR DEVICES.
23. (△) PROVIDE BARRIER BETWEEN CONTACT BLOCKS FOR DIVISION SEPARATION.
24. (△) TERMINATION CABINET INTERFACE [illegible]
25. (△) ADD METAL OXIDE VARISTOR GE CAT # V130LA2 [illegible] RELAY / CONTACTOR COILS.

TI
APERTURE
CARD

8412180229

PDR RIDS